

Notes on Mexican and Southwestern U.S.
Bethyridae (Hymenoptera): Part II,
Epyrinae¹

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Rhabdepyris (Trichotepyrus) cubiceps new species

Holotype.—♀, MEXICO: SINALOA: Mazatlan, 6 August 1964
(W. R. M. Mason) [CNC].

Description of female type.—Length 4.5 mm; LFW 3.1 mm. Head and thorax black, rather dull; abdomen shining black, apical two segments suffused with pale ferruginous; mandibles dusky ferruginous, antennae also of this color except flagellum light brown beneath; coxae black, legs otherwise light ferruginous except hind femora with a black spot near the base; wings subhyaline, fore wing with an elongate brownish cloud just below the radial vein. Mandibles broad, probably 5-toothed though in fact so badly worn that this is uncertain; clypeus obtusely angulate, with an arching median ridge, protruding only a short distance beyond the antennal insertions. Head unusually long and thick, WH $0.90 \times$ LH, thickness of head about $0.60 \times$ LH; vertex, in full frontal view, weakly concave medially. Antennal scrobes not margined; eyes strongly hairy, removed from vertex crest by about 0.6 their own height; WF $1.12 \times$ HE; ocelli in a compact triangle opposite eye tops, far below vertex crest, OOL $1.25 \times$ WOT. First four antennal segments in a ratio of about 35:9:8:12, segments three and eleven each about $1.3 \times$ as long as thick. Front rather dull, with strong surface sculpturing and rather coarse punctures; vertex strongly alutaceous but not notably punctate. Pronotal disc rather abruptly sloping anteriorly and laterally, but not at all carinate; posterior margin not paralleled by a punctate groove; surface strongly alutaceous and with an abundance of

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small punctures; pronotal disc slightly longer medially than mesoscutum, the latter wholly alutaceous but more weakly punctate; notauli thin, divergent anteriorly; scutellar furrow weakly arched, weakly expanded at each end. Propodeal disc $1.3 \times$ as wide as long, with seven discal carinae, sides with fine, radiating striae; side-pieces with strong longitudinal striae. Mesopleurum alutaceous, rather dull; lower fovea broadly open above, bearing some rather coarse punctures. Front femora not much swollen, measuring $2.25 \times$ as long as wide.

Allotype.—♂, same data as type [CNC].

Description of male allotype.—Length 5.0 mm; LFW 3.5 mm. Black; mandibles black except dull ferruginous apically and along upper margin; scape black, flagellum very dark brown, somewhat lighter beneath; coxae black, femora black except front pair light brown on apical third, middle pair light brown at base and apex; legs otherwise testaceous; wings subhyaline. Mandibles 5-toothed; clypeus angulate, with an arching median carina; antennal scrobes not at all carinate. First four antennal segments in a ratio of about 26:7:4:20, segment four about $2.2 \times$ as long as thick, segment eleven about $2.7 \times$ as long as thick. WH/LH = 1.0; WF $1.1 \times$ HE; OOL and WOT subequal. Front dull, strongly alutaceous, punctures shallow and inconspicuous. Pronotal disc slightly more shining and more evidently punctate than the front, its posterior margin paralleled by a weak depression. Features of mesonotum and propodeum as described for female, the propodeal disc measuring $1.3 \times$ as wide as long, as in that sex, the transverse striae obsolete behind. Lower mesopleural fovea open above on the middle half, without the strong punctures found in the female.

Remarks.—The male and female have so many features in common that there seems little doubt that they represent the two sexes of one species. This is a striking and unusual species, especially with respect to the head of the female. It is a member of the *megacephalus* group; the female runs to *angusticeps* Evans in my 1965 key, although the front femora are much less robust. However, the female *angusticeps* has a much more shining front and narrower vertex, a more elongate propodeum,

and many other differences. The male runs to couplet 7 in my key, but it differs from *amabilis* Fouts in its much larger size and different pronotal sculpturing, from *texanus* Evans in its more nearly circular head and much more coarsely sculptured head and thoracic dorsum.

Rhabdepyris (Trichotepyrus) apache Evans, 1965

As I pointed out in *Psyche*, 72: 269, this species appears to be widely distributed and not uncommon in western Mexico, having been recorded from Sonora, Sinaloa, Jalisco, and the Tres Marias Islands. R. C. Bechtel and E. I. Schlinger collected no less than 40 ♂♂ of this species at and near Acapulceta, NAYARIT, 4 May 1953 [CIS]. I have also seen three more specimens from SINALOA: 1 ♂, 13 mi. N of Elota, 14 Aug. 1960 (Arnaud and Ross) [CAS]; and 2 ♂♂, Mazatlan, 6 Aug. 1964 (W. R. M. Mason) [CNC].

Rhabdepyris (Trichotepyrus) weneri Evans, 1965

This species was described from three specimens from Arizona. It can now be recorded from CHIHUAHUA: 1 ♂, Santa Clara Canyon, 5 mi. W Parrita, 21 June 1956 (J. W. MacSwain) [CIS].

Rhabdepyris (Chlorepyrus) quinquelineatus Keiffer, 1906

This poorly known species can now be recorded from OAXACA: 1 ♂, Temascal, 30 June 1964 (A. G. Raske) [CIS]. It has previously been recorded from Veracruz, Yucatan, El Salvador, and Nicaragua.

Anisepyrus speciosus new species

Holotype.—♀, EL SALVADOR: Quezaltepeque, 500 meters, 19 June 1963 (D. Q. Cavagnaro and M. E. Irwin) [CAS].

Description of female type.—Length 4.5 mm; LFW 3.3 mm. Head and thorax black, the front and thoracic dorsum with weak, dark, olive-green reflections; propodeum black; abdomen piceous, shining, the apical fourth suffused with dull ferruginous; mandibles rufo-testaceous, antennae also of this color except flagellum strongly infuscated on upper surface beyond the basal

two segments; coxae and femora black, hind tibiae somewhat infuscated, legs otherwise bright rufo-testaceous. Wings lightly tinged with luteous, fore wings with two large brown bands, one occupying the outer 0.6 of the median and submedian cells, the other crossing the wing at the radial vein. Mandibles moderately broad, with five large, subequal teeth; clypeus broadly rounded except angulate medially, at the end of the high, arching median carina. Antennal scrobes and insertions not at all margined above by carinae. First four antennal segments in a ratio of about 40:12:10:13, segments three and eleven both very slightly longer than thick. WH $0.96 \times$ LH; vertex passing nearly straight across a considerable distance above eye tops; front broad, WF $1.47 \times$ HE; ocelli in a small triangle, front angle less than a right angle, OOL $1.6 \times$ WOT. Front alutaceous, rather weakly shining, uniformly covered with small punctures which are separated by $1-2 \times$ their own diameters. Pronotal disc also alutaceous and covered with small punctures, margined by carinae anteriorly and laterally and its posterior margin paralleled by a punctate groove. Mesoscutum transversely depressed, weakly punctate on the posterior half, the notauli strong on the posterior two thirds; scutellar groove arching backward and broadened at each end. Propodeal disc measuring $1.25 \times$ as wide as long, with seven discal carinae, sublaterals also well developed, the disc otherwise strongly transversely striate; posterior foveae strong; declivity transversely striate, more strongly so below; side-pieces finely striolate. Mesopleura strongly alutaceous, weakly punctate, the lower fovea well defined except its upper margin indistinct on the middle third. Front femora not much swollen, measuring $2.4 \times$ as long as wide; middle tibiae spinose above for most of their length.

Remarks.—This striking and unusual species is known from a single specimen. The spinose middle tibiae would seem to place it in the *occidentalis* species-group, but the lack of scrobal carinae, propodeal sculpturing, banded wings, and other features tend to suggest that it is an aberrant member of the *proteus* group. Other members of the *proteus* group possessing banded wings are all smaller and more slender species.

Epyris connexus new species

Allotype.—♀, ARIZONA: Madera Canyon, Santa Rita Mts., 30 July 1955 (F. X. Williams) [CAS].

Description of female allotype.—Length 5.3 mm; LFW 3.4 mm. Black, apical abdominal segment brownish; mandibles light castaneous; scape black except paler on apical fifth; flagellum dull castaneous, upper surface fuscous; coxae black; femora black except outer third of fore femora rufo-castaneous like remainder of legs; wings hyaline, veins light brown, setulae rather pale. Mandibles slender, bidentate, the inner tooth broad and sloping into the inner margin; clypeus short, very broadly subangulate. Head unusually broad for this genus, WH $1.08 \times$ LH; antennae arising well below bottoms of eyes; vertex passing straight across a distance above eye tops equal to about $0.6 \times$ HE; eyes with only very short, inconspicuous hairs. First four antennal segments in a ratio of about 31:8:8:10, segment three not longer than thick, segment eleven $1.2 \times$ as long as thick. Front broad, WF $1.6 \times$ HE; ocelli in a very broad, flat triangle, the posterior ocelli removed from the vertex crest by less than their own diameters; OOL $1.15 \times$ WOT. Front weakly alutaceous, moderately shining, wholly covered with small punctures which are separated by little more than their own diameters. Pronotal disc moderately shining and closely punctate like the front, along the midline about $1.6 \times$ as long as mesoscutum, the latter covered with minute punctures and with strong, complete notauli. Scutellar pits elliptical, longer than wide, separated by $4 \times$ their own greatest diameter, the two pits connected by a weak, shallow groove very close to the anterior margin of the scutellum. Propodeal disc $1.5 \times$ as wide as long, the median carina strong and complete, the median U-shaped area bordered laterally by two other strong carinae which extend about 0.7 the length of the disc; U-shaped area reticulate, most of the ridges primarily longitudinal; sides of disc shining and with only very weak surface sculpturing; declivity shining and weakly sculptured except for the median carina; side-pieces finely striolate. Mesopleurum moderately shining, with a few

small punctures, with a V-shaped ridge, the upper arm of which passes across the top of the pit. Front femora incrassate, measuring $1.9 \times$ as long as wide; middle tibiae strongly spinose; claws dentate.

Holotype.—♂, ARIZONA: SW Research Station, 5 mi. W Portal, 5,400 feet, 11 Sept. 1959 (H. E. Evans; visiting poplar honeydew) [MCZ].

Description of male type.—Length 4.4 mm; LFW 2.9 mm. Black; mandibles testaceous, black at extreme base; scape fuscous, flagellum bright ferruginous; coxae black, middle and hind femora fuscous, front femora ferruginous except somewhat infuscated basally and above; legs otherwise rufo-testaceous; wings hyaline, with light brown veins, the setulae pale, giving the wings a somewhat whitish bloom. Mandibles bidentate; clypeus broadly subangulate; eyes bare; scrobes not margined. First four antennal segments in a ratio of about 9:2:6:6, segment three about $1.3 \times$ as long as thick, segment eleven about $1.5 \times$ as long as thick. WH $1.1 \times$ LH; WF $1.2 \times$ HE, the eyes strongly convergent below; vertex passing nearly straight across, the ocelli in a very broad, flat triangle, the posterior ocelli very close to the vertex crest; OOL only 0.9 WOT. Front alutaceous, rather weakly shining, wholly covered with small, shallow punctures which are separated by $1-2 \times$ their own diameters. Thoracic dorsum also closely and finely punctate, moderately alutaceous; median length of pronotal disc subequal to that of mesoscutum; scutellar pits as described for female. Propodeal disc very short, $1.7 \times$ as wide as long, its median U-shaped area strongly reticulate, bordered on each side by a strong carina on the anterior half; sides of disc finely, transversely striolate; side-pieces longitudinally striolate. Mesopleurum somewhat shining, obscurely punctate, the upper arm of the V-shaped ridge passing across the top of the pit, as in the female. Front femora somewhat incrassate, measuring $2.1 \times$ as long as wide; middle tibiae with many small spines above; claws dentate. Abdomen stout, fusiform.

Paratypes.—ARIZONA: 6 ♂♂, same data as type except five of them collected on 9 September 1959 [MCZ, AMNH, CU]; 1 ♂.

Santa Rita Mts., 12 July 1950 (P. P. Cook; on *Phoradendron* on oak) [KU].

Variation.—The males vary considerably in size (LFW 2.1–2.9 mm) but show no important variation in sculpture or color except that in some specimens the front femora are wholly fuscous. The propodeal disc varies from 1.6 to 1.9 \times as wide as long, and there is minor variation in the sculpturing of the median area.

Remarks.—This is an unusual species, and the broad head and weakly connected scutellar pits suggest that it is somewhat annectant with *Rhabdepyris*.

Epyris tabascoensis new species

Holotype.—♂, MEXICO: TABASCO: Teapa, January (H. H. Smith) [BMNH].

Description of male type.—Length 5.0 mm; LFW 2.7 mm. Head and thorax black; abdomen dark brown, shining; mandibles testaceous; antennae testaceous except scape somewhat infuscated, flagellum rather strongly infuscated on apical half; coxae, femora, and hind tibiae dark brown, legs otherwise testaceous; wings subhyaline, veins and stigma brown. Mandibles bidentate; clypeus with an angular median lobe and fairly prominent, though not protruding, lateral lobes; scrobes not margined and eyes not hairy. First four antennal segments in a ratio of about 10:5:4:7, segment three about as long as thick, segment eleven about 1.6 \times as long as thick. Head only slightly longer than wide, WH 0.97 \times LH; eyes convergent below, WF only about 0.9 \times HE; front angle of ocellar triangle less than a right angle, OOL and WOT about equal. Front alutaceous, moderately shining, with small, crowded punctures below and larger although shallow, more widely spaced punctures above. Thoracic dorsum alutaceous, with shallow, rather inconspicuous punctures; median length of pronotal disc about twice that of mesoscutum; notauli wide, complete; scutellar pits large, longer than wide, separated by about their own greatest diameter. Propodeal disc elongate, only 1.1 \times as wide as long, with remarkably coarse sculpturing: there are three complete discal

carinae, the more lateral ones broad and flat-topped, plus strong sublaterals and laterals; between these seven carinae there are strong, irregular transverse ridges; declivity transversely striolate, with a median carina; side-pieces with coarse reticulations overlying an alutaceous background. Mesopleurum alutaceous, somewhat shining, with a rather large pit, the upper arm of the V-shaped ridge crossing above the pit. Middle tibiae somewhat spinose above; claws strongly dentate. Abdomen robust, fusi-form.

Remarks.—This species is known from a single specimen, but this specimen is unique in so many features that it is useful to have a name for it in the initial stages of my current studies of the genus *Epyris*. Similar propodeal sculpturing occurs in a few South American species, but these appear otherwise unrelated to *tabascoensis*.

ALPHABETICAL LIST OF ABBREVIATIONS USED IN TEXT

Structures

- DAO: diameter of anterior ocellus
 HE: height of eye (maximum, lateral view)
 LFW: length of fore wing
 LH: length of head (apical margin of clypeus to median vertex crest)
 OOL: ocello-ocular line (minimum distance from eye to lateral ocellus)
 WF: width of front (measured at its minimum point)
 WH: width of head (maximum, including eyes)
 WOT: width of ocellar triangle (including lateral ocelli)

Institutions

- AMNH: American Museum of Natural History, New York
 BMNH: British Museum (Natural History), London
 BPBM: B. P. Bishop Museum, Honolulu, Hawaii
 CAS: California Academy of Sciences, San Francisco
 CDAS: California Dept. of Agriculture, Sacramento
 CIS: California Insect Survey, Berkeley
 CNC: Canadian National Collection, Ottawa
 CU: Cornell University, Ithaca, N. Y.
 KU: Kansas University, Lawrence
 MCZ: Museum of Comparative Zoology, Cambridge, Mass.
 UA: University of Arizona, Tucson
 UCD: University of California, Davis
 USNM: United States National Museum, Washington, D. C.